



The Role of Environmental Hazards in Premature Birth

Edited by Donald R. Mattison, Samuel Wilson, Christine Coussens, and Dalia Gilbert
Washington, DC: National Academies Press, 2003. 127 pp. ISBN: 0-309-09065-2, \$35 paper

Preterm birth occurs frequently in most countries from which we have reliable statistics. Prematurity—a birth that occurs before 37 weeks of gestation—is a serious condition that carries a substantial excess risk of death, diseases, and

social burdens for the infant, especially for those born before 32 weeks of gestation. “Prematurity” is a clinical term indicating that the newborn is not yet suited for extra-uterine life.

As stated in *The Role of Environmental Health Hazards in Premature Birth*, researchers believe that preterm birth is increasing in some countries, but the extent to which it is increasing is not known. It is of the utmost importance to find out whether preterm birth in fact is increasing, and the workshop participants presented in the book could have elaborated on this aspect in greater detail. The way we estimate gestational age is, of course, significant in determining an increase in preterm birth, and the widespread use of ultrasound to estimate gestational age has enhanced predictions for clinical practice but perhaps not for monitoring. Using ultrasound as a monitoring instrument requires use of comparable procedures and appropriate standards. The changes in fertility patterns in many countries as well as the increasing use of infertility treatment may play a role.

This book combines epidemiology with biology and clinical research findings. The importance of prematurity clearly justifies investments in research, and the March of Dimes, the National

Institute of Environmental Health Sciences, the Centers for Disease Control and Prevention, the U.S. Environmental Protection Agency, and the Institute of Medicine, among other organizations, have taken up this important challenge. At present several attempts to prevent preterm birth have failed, and the promising results based on early intake of progesterones or n-3 fatty acids will at best only prevent some cases of preterm birth. Without effective preventive measures not much will be gained by being able to identify a pregnant woman at high risk.

The book presents six summaries from five workshops, as well as abstracts. Workshop participants included pediatricians, perinatologists, economists, epidemiologists, toxicologists, as well as other scientists. The chapters cover determinants of preterm birth, the biology of preterm birth and delivery, gene–environment interactions, and finally social implications and future directions for research. The weakest chapter is on gene–environment interactions, which is not surprising because we still know little about the role of genetics in prematurity. Family studies indicate that genetic factors do play a role.

More could be gained by investing better methods for monitoring preterm birth. Having monitoring programs following the same protocol in different countries could provide important clues to aspects that are the most important determinants of preterm birth. Given the large variation we expect to see on this condition among populations, much more could be learned from focusing on the big picture rather than looking at the biologic details. The book unfortunately does not go into detail about the conditions for setting up such a monitoring program, which should be implemented in addition to the monitoring of low birth weight.

Despite this shortcoming, the book is highly recommended for all with an interest in preterm birth and prematurity.

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